From glowbugs@sco.theporch.com Sun Mar 16 22:39:44 1997
Return-Path: <glowbugs@sco.theporch.com>
Received: from sco.theporch.com (sco.theporch.com [207.234.31.38])
          by uro.theporch.com (8.8.5/AUX-3.1.1)
          with ESMTP id WAA27320 for <shimshon@uro.theporch.com>;
          Sun, 16 Mar 1997 22:39:43 -0600 (CST)
From: glowbugs@sco.theporch.com
Received: from sco.theporch.com (localhost [127.0.0.1])
          by sco.theporch.com (8.8.5/SCO-5.0.2) with SMTP
       id EAA19143; Mon, 17 Mar 1997 04:36:10 GMT
Date: Mon, 17 Mar 1997 04:36:10 GMT
Message-Id: <199703170436.EAA19143@sco.theporch.com>
Errors-To: ws4s@infoave.net
Reply-To: glowbugs@sco.theporch.com
Originator: glowbugs@sco.theporch.com
Sender: glowbugs@sco.theporch.com
Precedence: bulk
To: Multiple recipients of list <glowbugs@sco.theporch.com>
Subject: GLOWBUGS digest 476
X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
X-Comment: Please send list server requests to listproc@sco.theporch.com
Status: O

GLOWBUGS Digest 476

Topics covered in this issue include:

  1) Re: Vacuum Tube Synchronous Demodulator
     by mjsilva@ix.netcom.com (michael silva)
  2) Re: my regen fired it up
     by mjsilva@ix.netcom.com (michael silva)
  3) Re: Vacuum Tube Synchronous Demodulator
     by Chris Trask <ctrask@primenet.com>
  4) Elements of Radio, 1973 ed.?
     by Art Winterbauer <art@comet.ucar.edu>
  5) Re: Vacuum Tube Synchronous Demodulator
     by mjsilva@ix.netcom.com (michael silva)
  6) Re: Anybody indexing Handbook articles?
     by "Paul F. Carreiro" <carreiro@current.barepower.net>
  7) A tube disposal note......
     by tomrice@netcom.com (Tom R. Rice)
  8) Re: Vacuum Tube Synchronous Demodulator
     by Chris Trask <ctrask@primenet.com>
  9) Announcement FT-243 Crystals
     by Conard Murray <ws4s@InfoAve.Net>
 10) Re: Elements of Radio, 1973 ed.?
     by Steve Ellington <n4lq@iglou.com>
 11) A rack suggestion.......

    by tomrice@netcom.com (Tom R. Rice)
 12) Re: A tube disposal note......
    by Bob Roehrig <broehrig@admin.aurora.edu>
 13) A rack suggestion.......
    by ralph.hartwell@emachine.com (Ralph Hartwell)

Date: Sat, 15 Mar 1997 23:12:03 -0600 (CST)
From: mjsilva@ix.netcom.com (michael silva)
To: glowbugs@theporch.com
Subject: Re: Vacuum Tube Synchronous Demodulator
Message-ID: <199703160512.XAA00706@dfw-ix6.ix.netcom.com>

>...there was mention of a
>sheet-beam modulator OTHER THAN the more common 6AR8.

The beam-deflection tubes I know of are the 6AR8, 6JH8 and 6ME8 (and of course the 7360).

73,
Mike, KK6GM

Date: Sat, 15 Mar 1997 23:35:48 -0600 (CST)
From: mjsilva@ix.netcom.com (michael silva)
To: glowbugs@theporch.com
Subject: Re: my regen fired it up
Message-ID: <199703160535.XAA03285@dfw-ix1.ix.netcom.com>

Lee wrote:
>
>Well the big day finally got here
>Fired up my 2 tube regen (2 6aq5's).

Congratulations! We seem to be in the middle of a regen revival, thanks largely to the tutelage of NA4G.

>...Need more audio,
>have to run it full bore to get useable volume.
>Am going to add a audio amp stage in
>front of audio out, probably a 6at6.
>...Am using a
>70v line trans for a outout trans and another
>unknown outout trans pri for det coupling.
>Det uses a rf choke filter with pri of trans

>as load.

Before adding another audio stage, I'd look at your detector load. I just measured the primary of a 2.5k/8 Ohm transformer and it's only 1.3H (1.4 with secondary in phase). A 10k/90k interstage transformer primary is only 4.4H (18.3 with secondary in phase). The E&E Radio Handbook recommends at least 250H for a pentode detector load. Assuming you have enough plate supply voltage I'd add some resistance to the plate load. Your 1.3H (+-) load only has a reactance of about 10k at 1000 Hz -- not much of a load for a pentode! A 50 or 100k plate load resistor would give 5 or 10 times as much gain, as long as you kept the operating point above the tube "knee". I think the use of inductive loads for pentode detectors might be mostly a vestige left over from the triode days, when (a) load impedances needed to be much less, and (b) battery operation left no excess voltage to be "wasted" in a plate load resistor, and (c) they were readily available.

73,
Mike, KK6GM

Date: Sun, 16 Mar 1997 07:16:57 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: Multiple recipients of list <glowbugs@sco.theporch.com>
Subject: Re: Vacuum Tube Synchronous Demodulator
Message-ID: <Pine.BSI.3.95.970316070508.13236D-100000@usr03.primenet.com>

To the group:
     I have received the following replies in response to my query about alternates to the 6AR8 sheet-beam modulator:

>
>Date: Sat, 15 Mar 1997 22:39:56 -0800 (PST)
>From: John Kolb <jlkolb@cts.com>
>
>There are several replacements possible.
>
>For beam deflection tubes, there is the most famous, aw well as
>pricey 7360, and also 6AR8, 6JH8, AND 6ME8.
>
>There is also a class of tubes called dual pentodes, which have
>a common cathode and first two grids, and two final grids and
>plates. These can also be used as balanced mixers. Send me an address,
>and I'll send you an article on using the 6BU8. This group includes
>6BU8, 6GS8, 6LE8, 6MK8, and I believe, 6KF8, but I can't find

>the 6KF8 in either the RCA or Sylvania manual at the moment to
>verify.
>

>
>Date: Sun, 16 Mar 1997 05:13:27 GMT
>From: michael silva <mjsilva@ix.netcom.com>
>
>
>The beam-deflection tubes I know of are the 6AR8, 6JH8 and 6ME8 (and of
>course the 7360).
>

I also remembered a GE tube manual that was buried in my shop, and came across yet another, the 6HW8. So far, there are the following five envelopes:

6AR8
6HW8
6JH8
6ME8
7360

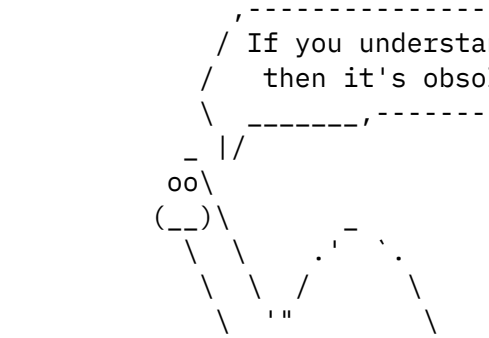
My next question is this: Is there any applications literature for these? I know of numerous applications of the 7360 in the ARRL Handbook, but the commercial colour TV devices are more readily available. Even a schematic from a colour TV would be helpful.

The earlier question about the synchronous demodulator peaked my interest in these. I'm curious as to the dynamic range that can be obtained by using a pair in a Costas Loop demodulator.

I gotta go.

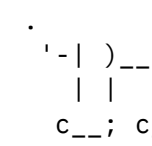
Regards,

Chris



Circuit Design for the
RF Impaired

Chris Trask / N7ZWY
Principal Engineer
ATG Design Services
P.O. Box 25240
Tempe, Arizona 85285-5240



Email: ctrask@primenet.com

Graphics by Loek Frederiks

Date: Sun, 16 Mar 1997 08:22:49 -0700 (MST)
From: Art Winterbauer <art@comet.ucar.edu>
To: glowbugs <glowbugs@theporch.com>
Subject: Elements of Radio, 1973 ed.?
Message-ID: <Pine.SUN.3.95.970316081704.8090A-100000@spike>

I would like to purchase a book, should anyone have a copy they could spare:

Elements of Radio, by Abraham Marcus & William Marcus. Sixth Edition.
  Prentice-Hall: Englewood Cliffs, NJ. 1973. ISBN 0-13-271189-3.

This book explains electronic theory from practical applications and problems, an approach I find quite useful, and, by the way, goes into some detail on regen and amplifier circuits. The authors explain the stages of radio development, carefully demonstrating the need for each stage in its evolution. I wish this approach was more rigorously followed in the ARRL handbook series.

73 de Art, WA5OES

Date: Sun, 16 Mar 1997 10:57:30 -0600 (CST)
From: mjsilva@ix.netcom.com (michael silva)
To: glowbugs@theporch.com
Subject: Re: Vacuum Tube Synchronous Demodulator
Message-ID: <199703161657.KAA28020@dfw-ix13.ix.netcom.com>

Chris wrote:

>>Date: Sat, 15 Mar 1997 22:39:56 -0800 (PST)
>>From: John Kolb <jlkolb@cts.com>

>>There is also a class of tubes called dual pentodes, which have
>>a common cathode and first two grids, and two final grids and
>>plates. These can also be used as balanced mixers... This group
>>includes 6BU8, 6GS8, 6LE8, 6MK8, and I believe, 6KF8, but I can't
>>find the 6KF8 in either the RCA or Sylvania manual at the moment to
>>verify.

Yes, the 6KF8 is a dual pentode, listed in the GE Essential
Characteristics manual

>   My next question is this: Is there any applications literature
>for these? I know of numerous applications of the 7360 in the ARRL
>Handbook, but the commercial colour TV devices are more readily
>available. Even a schematic from a colour TV would be helpful.

There was a 40 meter SSB transceiver in August 1963 QST that used a
6AR8. This article was also included in mid-60s to early-70s
edititions of ARRLs "SSB for the Radio Amateur".

73,
Mike, KK6GM

Date: Sun, 16 Mar 1997 10:19:35 -0800
From: "Paul F. Carreiro" <carreiro@current.barepower.net>
To: glowbugs@sco.theporch.com
Subject: Re: Anybody indexing Handbook articles?
Message-ID: <3.0.32.19970316101933.007164a8@mail.barepower.net>

At 11:26 PM 3/15/97 GMT, Mike wrote:
>Hi all,
>
>I know I've seen some talk of this, but is anybody actually maintaining
>an index of glowbug articles from old Handbooks, etc? The reason I ask
>is that I have been, when the mood strikes, jotting down TX and RX
>articles found in my and friends' ARRL and E&E Handbooks. Does anybody
>want to add this info to a larger index?
>
>(BTW, I'll be gone next week, so any email received after Saturday will
>have to wait a week for an answer)
>
>73,
>Mike, KK6GM

Mike (and anyone else interested),

There are a few "glowbug bibliography" listings that I know of. One I maintain
on my web site (URL in my signature). It contains a list of articles from handbooks I have here or have seen. There is a link to the other bibliography list in on my page also. I can't recall at the moment who maintains it though.

I am in the process of scanning in various glowbug projects from my collection of handbooks onto my web site. 1961 was the first. I hope to have another year's page up in a day or so. (By the way, if anyone has a specific request for an article, picture, text from any section of the handbooks, I'd be glad to scan and post or email.)

As for your collection of glowbug articles Mike, I'd be glad to include them in the bibliography on my site (with proper credit of course).

And, if anyone would like to post an article, picture, schematic on the web, just drop me a note and I'll include it.

73 all.
Keep ticklin the ether.
Paul N6EV

  Paul F. Carreiro - N6EV - ex-N6HCS - El Camino Village, CA
  E-Mail: carreiro@barepower.net - http://www.barepower.net/~carreiro/
  QRP - Boatanchors - Mobile CW - QRQ +40WPM
  NorCal QRP #367 - QRP QRCI #8885 - CW FISTS #1407 - QRP-L #236
  Zuni Loop Mountain Expeditionary Force (QRP Field Day)

Date: Sun, 16 Mar 1997 11:12:43 -0800 (PST)
From: tomrice@netcom.com (Tom R. Rice)
To: boatanchors@theporch.com (ba)
Cc: glowbugs@theporch.com (glowbugs)
Subject: A tube disposal note......
Message-ID: <199703161912.LAA00267@netcom18.netcom.com>

> Although there were some facetious facets to my
> post re Hg-containing tube disposal, the points
> I think are important don't really concern "safe"
> disposal, but rather the conservation of scarce
> resources.
>
> Once you've managed to let the vacuum out, you can
> then gently break off the envelope. Then you can
> carefully remove the guts, etc.

It bothers me to think that the remaining useful
part will be disposed of: _the_base_!

Since we builders always need coil forms, and
old tube bases make pretty good ones, you get the
idea. They also make good multi-pin plugs
for cables.

Mebbe I should offer to do the disposal job (just
don't ask me the details ;-)

73 de WB6BYH
--
"Start off every day with a smile and get it over with." --W.C.Fields
Tom R. Rice
tomrice@netcom.com
CIS: 71160,1122

Date: Sun, 16 Mar 1997 12:49:42 -0700 (MST)
From: Chris Trask <ctrask@primenet.com>
To: michael silva <mjsilva@ix.netcom.com>
Subject: Re: Vacuum Tube Synchronous Demodulator
Message-ID: <Pine.BSI.3.95.970316124351.14038B-100000@usr10.primenet.com>

On Sun, 16 Mar 1997, michael silva wrote:

> Chris wrote:
>
> > My next question is this: Is there any applications literature
> >for these? I know of numerous applications of the 7360 in the ARRL
> >Handbook, but the commercial colour TV devices are more readily
> >available. Even a schematic from a colour TV would be helpful.
>
> There was a 40 meter SSB transceiver in August 1963 QST that used a
> 6AR8. This article was also included in mid-60s to early-70s
> edititions of ARRLs "SSB for the Radio Amateur".
>

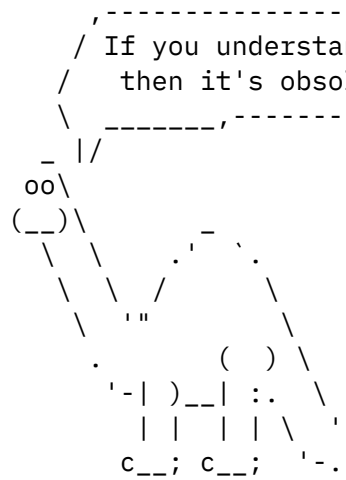
Yes, I found it in my copy of "Single Sideband for the Radio
Amateur", 4th edition (1965) on pages 93-102. I was initially con-
fused by the fact that the second (screen) grid is connected to pin
#5, which is the side of the filament which is grounded. The third
(supressor) grid, pin #3, is connected to +150 volts. Not something
that I would have guessed on my own.

Thank you for the advice.

I gotta go.

Regards,

Chris



Circuit Design for the
RF Impaired

Chris Trask / N7ZWY
Principal Engineer
ATG Design Services
P.O. Box 25240
Tempe, Arizona 85285-5240

Email: ctrask@primenet.com

Graphics by Loek Frederiks

Date: Sun, 16 Mar 1997 14:27:41 -0600
From: Conard Murray <ws4s@InfoAve.Net>
To: glowbugs@sco.theporch.com
Subject: Announcement FT-243 Crystals
Message-ID: <2.2.32.19970316202741.00a6b50c@infoave.net>

>Return-path: <owner-qrp-l@Lehigh.EDU>
>Date: Sun, 16 Mar 1997 15:08:11 -0500 (EST)
>From: n0acs@juno.com (John R. Morris)
>Subject: Announcement FT-243 Crystals
>Sender: owner-qrp-l@Lehigh.EDU
>To: Low Power Amateur Radio Discussion <qrp-l@Lehigh.EDU>
>X-CC: wb0aaq@juno.com
>Reply-to: n0acs@juno.com
>X-Juno-Line-Breaks: 3,6-7,11-12,14-15,17,26-27,36-37,41-42,45-47
>X-Listprocessor-version: 8.1 beta -- ListProcessor(tm) by CREN
>
>OK Fellow amateurs, I am bowing to your requests and have made
>arrangements to provide the FT-243 style crystals. They will be
>available at reasonable prices. I will be posting an announcement with

>details within the next 2 weeks.
>Hope this puts your mind at ease. If any of you have FT-243 xtals with
>"good" holders I will plan on allowing a credit for re-working your
>holder, or allow exchange credit.
>
>If anyone has crystals in the FT-243 (excluding RCA type with the 2
>screws through the bottom of holder), HC-12/U, CR-1A/AR, or DC-30 type
>crystals you would like to sell in any quantity please send me a list of
>what you have available.
>
>I am especially interested in freqs. in the 3.0 to 3.5 Mhz, 6.5 to 7.0,
>and 9.0 to 10.0 Mhz ranges.
>
>I am well aware of the "void" which was left by Bob's closing CW
>crystals.
>Most of you do not know the story of how Bob could still sell crystals to
>us amateurs at the prices he was able to for so many years. Well Bob and
>his wife were very "lucky" in being able to make purchases of large
>quantities of surplus crystals at the closing of WW-2, from the
>government . This allowed him to supply us with his crystals, always at
>reasonable prices, in what I would best describe as "a labor of love".
>The crystal stock he had that was on freqs. inside the amateur bands were
>depleted long ago, however, Bob continued to "cut up and re-grind" his
>remaining stock so that he could continue to provide us with crystals.
>
>As he has told me he had reached a point where considerable time was
>required to now re-work these "odd-ball" blanks and the availability of a
>continuing supply of the FT-243 holders was becoming "critical" to his
>needs. With the passing of his wife of many years(who did all the final
>frequency adjustment, and made sure the xtals had the proper amount of
>activity before she would ship them) Bob could no longer continue with
>"his labor-of-love" to his fellow amateurs. I have made arrangements with
>him regarding his stock, and hopefully when he overcomes his "loss" we
>will consummate this endeavor.
>
>In the meantime I have made other arrangements to try and
>"fill-this-void" and carry on with supplying the FT-243 type crystals. I
>welcome your help and support in attempting this, and will hope to hear
>your suggestions as I progress in this effort.
>
>I'm sure Bob would welcome a short note from any of his long standing
>customers if any would stop and take the time to tell him "they
>appreciated his labor-of-love on their behalf".
>
>73/ John/Phoenix Crystals
>
>
.-.

. Conard Murray WS4S   Glowbugs listowner .
. 217 Dyer Avenue   ws4s@infoave.net .
.   Cookeville, TN 38501 615-526-4093   .
.   <>< Wise men still seek Him ><>   .
. Member Arizona ScQRPions   QRP-L # 993 .
.-.

Date: Sun, 16 Mar 1997 15:33:51 -0500
From: Steve Ellington <n4lq@iglou.com>
To: art@comet.ucar.edu
Subject: Re: Elements of Radio, 1973 ed.?
Message-ID: <332C592F.1265@iglou.com>

Art Winterbauer wrote:
>
> I would like to purchase a book, should anyone have a copy they could
> spare:
>
> Elements of Radio, by Abraham Marcus & William Marcus. Sixth Edition.
>   Prentice-Hall: Englewood Cliffs, NJ. 1973. ISBN 0-13-271189-3.
>
> This book explains electronic theory from practical applications and
> problems, an approach I find quite useful, and, by the way, goes into
> some detail on regen and amplifier circuits. The authors explain the
> stages of radio development, carefully demonstrating the need for each
> stage in its evolution. I wish this approach was more rigorously
> followed in the ARRL handbook series.
>
> 73 de Art, WA5OES

I taught Radio Theory at the State Vocational school for seven years using that book. I can almost see it in my sleep. This was between 1970 and 1977. You might try contacting them or other Voc/Tech schools across the country. The school is now called Kentucky Tech. and is located in Ashland, Ky 41101. Maybe you could call and find out who the instructor is for either Radio/TV repair or Electronics and talk to them. If I weren't 200 miles away, I'de do it for you.

We also used another book for phase II which dealt with Radio Repair. I can't recall the name of the book but it was tremendous. We used training aids made by Philco. One was a huge, roll around rack measuring about 6ft wide and 6ft tall. It had a schematic of a superhet am. radio upon which components were plugged in. It was certainly easy to teach through the various stages of the set using generators and scopes to

show the signal at each point. Not only that, it was a really not rx. It had a tuned rf amplifier and two I.F. stages. We ran a wire across the roof from the 50ft tower and could receive stations from all-over during the daytime.

The main project for the course was building an All-American Five radio. This was a kit which had the usual 50C5, 35W4, 12BA6, 12BE6 and 12AV6 tubes. I hated those things. Not only were they poor receivers but unsafe due to no power transformer.

73 N4LQ Steve

Date: Sun, 16 Mar 1997 15:14:11 -0800 (PST)
From: tomrice@netcom.com (Tom R. Rice)
To: boatanchors@theporch.com (ba)
Cc: glowbugs@theporch.com (glowbugs)
Subject: A rack suggestion.......
Message-ID: <199703162314.PAA03378@netcom18.netcom.com>

> Back when I was younger, with big ideas, I wanted
> a whole wall of rack-mounted stuff, like the equipment
> bays at the telephone office where I worked. But that's
> high-cost stuff, and it hasn't gotten any better.
>
> One answer, which I've used several times since, is to
> make your racks out of wood. Basically, you build a
> wall of vertical 2x4s, properly spaced and secured
> to the floor and ceiling, just as you'd frame a wall.
>
> Use straight-grained Douglas Fir, properly dried, for
> the rack rails. Measure an open-frame rack for the
> spacing (17 1/2 inches, if memory serves) and use
> a solid 4x4 or 4x6 (on edge) for the bottom beam,
> under the whole bay.
>
> If painted a nice industrial gray color, your racks
> won't look "woody". Use sturdy wood screws (12x1 inch)
> with flat washers to mount the panels.
>
> Admittedly, you can't hang an AR-88 on its panel here,
> but I wouldn't dare do that with a steel rack, either.
> The wood rack makes it easy to add support shelves
> on the back side. I used heavy plywood and 1x2 or
> Reynolds aluminum angle stock for bracing.
>
> This is perfect for a basement or garage installation.

With a little more care in trim and painting, I've
converted a tract house bedroom into a super shack.
It was a pain in the fanny when we sold the house
and had to move, however ;-)

If it ain't rack mounted, it ain't professional!

73 de WB6BYH
--
"Start off every day with a smile and get it over with." --W.C.Fields
Tom R. Rice
tomrice@netcom.com
CIS: 71160,1122

Date: Sun, 16 Mar 1997 17:30:36 -0600 (CST)
From: Bob Roehrig <broehrig@admin.aurora.edu>
To: "Tom R. Rice" <tomrice@netcom.com>
Cc: Multiple recipients of list <glowbugs@sco.theporch.com>
Subject: Re: A tube disposal note......
Message-ID: <Pine.ULT.3.95.970316172824.4527D-100000@admin.aurora.edu>

On Sun, 16 Mar 1997, Tom R. Rice wrote:

>   It bothers me to think that the remaining useful
>   part will be disposed of: _the_base_!

Whenever I run across a bad tube, it gets tossed into a box for
future salvage of the base. Same for old chassis, like useless
AA-5 sets - wonderful source of speakers, tube sockets, IF cans,
and variable caps at least (sometimes the chassis too).

        E-mail broehrig@admin.aurora.edu   73 de Bob, K9EUI
            CIS: Data / Telecom   Aurora University, Aurora, IL
                      630-844-4898 Fax 630-844-5530

Date: Mon, 17 Mar 1997 02:34:00 GMT
From: ralph.hartwell@emachine.com (Ralph Hartwell)
To: glowbugs@theporch.com
Subject: A rack suggestion.......
Message-ID: <9703162045138495@emachine.com>

T>   One answer, which I've used several times since, is to
T>   make your racks out of wood. Basically, you build a

T>   Use straight-grained Douglas Fir, properly dried, for
T>   the rack rails. Measure an open-frame rack for the

T>   If painted a nice industrial gray color, your racks
T>   won't look "woody". Use sturdy wood screws (12x1 inch)
T>   with flat washers to mount the panels.

   A handy addition to the above construction technique is to take a couple of lengths of 1-1/2 x 1-1/2 x 1/8 inch aluminum angle stock and face the 2 x 4 wood rack rails with that. Place one side of the angle stock inside the rails and screw the stock to the 2 x 4 rails to hold it on place. The face of the angle stock may then be drilled and tapped for standard R&P hardware. Connect a heavy copper ground wire to each piece of aluminum angle and run it to earth ground.

 Ralph   W5JGV

 ¸ QMPro 1.53 ¸ Error:007 - System price error. Inadequate money spent.

End of GLOWBUGS Digest 476
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